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**Chiu et al.**

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(54) **SEMICONDUCTOR DEVICE AND  
FORMATION THEREOF**

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(71) Applicant: **Taiwan Semiconductor  
Manufacturing Company Limited,**  
Hsin Chu (TW)

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See application file for complete search history.

(72) Inventors: **Yi-Wei Chiu**, Kaohsiung (TW); **Wu  
Meng-Chuan**, Tainan (TW); **Tzu-Chan  
Weng**, Kaohsiung (TW); **Li-Te Hsu**,  
Shanhua Township (TW)

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(73) Assignee: **TAIWAN SEMICONDUCTOR  
MANUFACTURING COMPANY  
LIMITED**, Hsin Chu (TW)

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*Primary Examiner* — Tod T Van Roy

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*Assistant Examiner* — Vu A Vu

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(74) *Attorney, Agent, or Firm* — Cooper Legal Group,  
LLC

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(57) **ABSTRACT**

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A semiconductor device and method of forming the same are described. A semiconductor device includes an active area adjacent a gate structure. The gate structure includes a gate electrode over a gate dielectric, the gate dielectric having a bottom surface in a first plane. A second etch interacts with a first composition and an initial dopant to remove a bottom portion of a first sidewall spacer adjacent the gate structure, such that a bottom surface of the first sidewall spacer lies in a second plane different than the first plane. The removal of the bottom portion of the first sidewall spacer reduces a first distance between a source or drain and a bottom surface of the gate electrode, thus reducing proximity loading of the semiconductor device and improving functionality of the semiconductor device.

(52) **U.S. Cl.**

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**20 Claims, 6 Drawing Sheets**

